



Migration ecology and connectivity of At-Risk grassland birds – Year 2

Project # 15-764

Background:

Conservation of natural resources on DoD lands is ultimately necessary to sustain the military training mission by ensuring the long-term availability of training lands. In addition to serving its own mission, conservation fulfills DoD's obligation (under the Migratory Bird Treaty Act, Executive Order 13186, and Sikes Act) to protect and conserve migratory birds on installations through research, habitat management, partnerships, and education. For all of these reasons, management personnel and other resources are aimed at conserving birds and their habitat on installations.

Upland Sandpiper (*Bartramia longicauda*), Grasshopper Sparrow (*Ammodramus savannarum*), and Eastern Meadowlark (*Sturnella magna*) are three designated At-Risk migratory grassland bird species that occur on many military installations supporting grasslands. All three species have experienced population declines in parts or all of their breeding ranges. Resources can be used more efficiently and effectively if there is an understanding of the events affecting these migratory birds during their entire life cycle, rather than only during the three to four-month breeding season. To address the threats migratory birds face throughout the year, we need a basic understanding of where they go between their summer breeding seasons. This project will provide the basis for understand the movements of these species throughout the year. Understanding the entire annual cycle of migratory birds across their breeding range offers avenues for sharing the burden of protecting declining populations, and provides insights applicable to other installations supporting grassland birds.

Objective:

Our study objective is to reveal the migratory routes and timing, stopover areas, wintering grounds, and population connectivity for three At-Risk grassland bird species.

Summary of Approach:

We are using light-level geolocators, and Argos- and GPS-satellite tags to generate year-round location data for three bird species at seven DoD installations across the country.

Benefit:

The main objective of the study is to provide support to installations managing for any of the three At-Risk migratory grassland bird species by obtaining a continental and hemispheric-wide view of their movements and connectivity between breeding, migration, and wintering locations. The project will enhance military readiness by defining the role and responsibility of installations in the conservation of these At-Risk species, helping them comply with their obligation to develop and implement Integrated Natural Resources Management Plans (INRMPs) under the Sikes Act, and fulfilling their MOUs with USFWS as required by Executive Order 13186. Partnerships are an important part of INRMPs, and by identifying non-installation lands used by these species throughout the year, our research will enable DoD to partner with other landowners to enhance conservation of the species. With an improved understanding of migratory patterns and important non-breeding areas, DoD will be able to: more effectively manage for these At-Risk species; share conservation responsibility with other entities; begin to identify off-site threats to species; and provide the foundation for evaluating the relative efficacy and importance of management at installations supporting breeding, migration, and/or wintering populations of these species.

Accomplishments:

In 2015, we deployed 180 light-level geolocators (30 at each of six installations) on Grasshopper Sparrows, and we recovered 34 of these geolocators in 2016. We successfully obtained the stored, unprocessed data from all tags. In 2016, we deployed 29 GPS-satellite tags on Eastern Meadowlarks at four installations and one civilian facility. We also deployed four Argos-satellite and 11 GPS-satellite tags on Upland Sandpipers at three installations and one civilian facility. We are following the movements of the sandpipers wearing the Argos-satellite tags, which transmit daily movement data via the internet. To date, three of these sandpipers have migrated to South America. Data from the 40 GPS-satellite tags will be available in the summer of 2017.

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